**EHS 2112 RESEARCH METHODS (3 CU)**

**Course description:** Describes a framework for developing a research project proposal, implement and evaluate research in various areas of environmental health and basic knowledge of statistics and research techniques to carry out statistical analyses in environmental health research. Methods and skills required to identify a specific environmental problem for research and to demonstrate an ability to make valid judgments are discussed.

**Course Objectives**

By the end of this course, the student should be able to:

1. Define operational terms used in research.
2. Explain different types of research.
3. Describe the components of a research proposal.
4. Outline the structure of a research report
5. Identify and prioritize environmental health problems for research,
6. Describe the process of designing and conducting research.
7. Describe ethics in conducting research.
8. Evaluate a range of research methods and select an appropriate one to use in a project.

**Detailed Course Outline**

* Basic concepts and principles of research: types of research (action based, participatory) (descriptive, analytical, empirical)
* Steps of operational research
* Identification and prioritization of environmental health research problems
* Formulation of Research Problem statement
* Formulation of hypothesis/research questions, Research instruments design
* Research objectives formulation
* Justification / rationale for the study
* Methodology: study area, sampling, data collection tools data management, data analysis, interpretation, report writing, dissemination of report, ethics in research (consent forms, Ethical clearance procedure) Quality control and assurance, Budget
* Literature review

**Mode of delivery:**

* Lectures, seminars

**Mode of Assessment**

- Continuous assessment: exams and assignments **(40%)**.

- End of semester exam: MCQ’s, short answer and long assay questions **(60%)**.

**Suggested Reading List**

1. Lecture handouts and additional materials on reserve at the MUSPH Resource Centre.

2. The student will need access to a software package that can do descriptive statistics, graphics and basic hypothesis testing. The standard software package for the class will be EPI-INFO, which is available on the machines in the MUSPH computer lab.

3. Chava Frankfork – Nachnian and David N. Research Methods in Social Science.

4. Kuzma Jan W. and Bohnenblust Stephen E. (2001) Basic Statistics for the Health Sciences, 4th Ed. Mayfield Publishing Co.